

## **Summary of testimony by Laura S. Welch, MD, FACP, FACOEM on March 8, 2006**

Medical screening is the search for previously unrecognized disease, when finding the disease can lead to a benefit. Screening for silicosis or asbestosis has clear benefits, including (1) identification of occupations/industries where excess exposure occurs, so that exposure reduction can occur; (2) implementation of targeted smoking cessation programs; and (3) identification of individuals at heightened risk from other occupational exposures.

In 2000, the Association of Occupational and Environmental Clinics (AOEC) developed criteria for medical screening programs for asbestos; these principles apply equally as well to screening for silicosis. Omission of these important preventive aspects in the clinical assessment of asbestos-related lung disease falls short of the standard of care and ethical practice in occupational health.

(1) Screening on the basis of chest x-ray and work history alone identifies possible cases but does not by itself provide sufficient information to make a firm diagnosis, to assess impairment or to guide patient management.

(2) An appropriate screening program for asbestos-related lung disease includes properly chosen and interpreted chest films, reviewed within one week of screening; a complete exposure history; symptom review; standardized spirometry; and physical examination.

(3) Programs should also include smoking cessation interventions, evaluation for other malignancies and evaluation for immunization against pneumococcal pneumonia.

(4) Timely physician disclosure of results to the patient, appropriate medical follow-up and patient education are essential.

## **Medical screening for asbestosis, silicosis, and other occupational lung diseases**

Laura S. Welch, MD, FACP, FACOEM

March 8, 2006

Testimony before the Subcommittee of Oversight and Investigations,  
Committee on Energy and Commerce

**Qualifications:** I am a physician with board certification in both Occupational and Environmental Medicine and Internal Medicine. I received my medical degree from the State University of New York at Stony Brook, and have held faculty positions at the Schools of Medicine at Albert Einstein, Yale and George Washington Universities. Details of my education and training are set forth in my curriculum vitae

I have extensive experience in diagnosis and treatment of asbestos-related diseases and other occupational lung diseases. I have been in occupational medicine practice for over 20 years, and a substantial part of my practice has always been devoted to examination of workers exposed to respiratory hazards.

In addition, I have many years of experience in medical surveillance programs for asbestos. Since 1987 I have been the medical advisor to the Sheet Metal Occupational Health Institute Trust, a joint labor-management organization within the sheet metal industry established to provide medical examinations for sheet metal workers exposed to asbestos and other respiratory hazards. To date, SMOHIT has provided medical examinations to over 30,000 sheet metal workers, and is now the largest epidemiological database of asbestos-exposed workers in the country. I also developed similar medical

screening programs for the Laborers National Health and Safety Fund and other construction trades, in conjunction with the Occupational Health Foundation. I currently serve as medical director for a Department of Energy-funded medical screening program to provide medical examinations for former construction workers at a number of former atomic weapons production facilities. In each of these programs I have designed programs to detect asbestos-related disease, and designed algorithms for the examining physicians to use in interpretation of the results. I have been active in efforts to improve validity and reliability of x-ray reading to detect asbestos related disease in the United States; this work included publication of a paper on variability between readers' classification of x-rays using the International Labour Organization Guide to Classification of Pneumoconiosis, based on an analysis of results from these screening programs.

I currently am medical director at The Center to Protect Workers Rights, a research institute devoted to improving health and safety in the construction industry. Because of my expertise in medical programs for asbestos-exposed workers, I participated in a working group with representatives from labor, industry, and insurance companies to develop medical criteria for a bill to establish a national trust fund for compensation of asbestos related disease in the United States. I have also testified at hearings held by the Senate Judiciary Committee, at the committee's request, on various aspects of asbestos-related disease.

Attached is copy of my current curriculum vitae, which sets forth my education, training, professional affiliations, research activities and publications. I am testifying here today as an individual, and not on behalf of any group or organization.

### **Purpose of medical screening**

*Medical screening* is the search for previously unrecognized disease, when finding the disease can lead to a benefit. Mammography is a well-accepted screening test, for example, since it has been shown to improve life expectancy for breast cancer in those for whom a cancer is found early with screening; the same is true for colon cancer screening, skin cancer screening, and others. Occupational screening programs are designed to detect work-related disease at an early stage, when treatment or removal from exposure can improve the outcome of that disease.

Screening is only one of the important steps in prevention of occupational disease. The first step, the primary prevention, is reduction or elimination of hazardous exposures. The second step, when hazardous exposures have not been eliminated, is screening; this is called secondary prevention. Tertiary prevention is essentially medical care and rehabilitation of disease, when it cannot be reversed after diagnosis.

Some key principles should underlie all medical screening programs:

- The tests used should be selective, and chosen to identify a specific disease.
- There must be some effective action that can be taken if the screening test is positive, such as removal from exposure or medical treatment. In the occupational setting, screening may benefit a group of workers by detection of health effects of hazardous exposures, the benefit need not accrue only the worker being screened in this context.
- Adequate follow-up is critical, and further diagnostic tests must be available, accessible, and acceptable to the individual screened. In the occupational setting, follow-up also entails action to reduce or eliminate the hazard
- Individuals who have been screened should receive test reports and interpretation of those results.
- The screening tests used should have good reliability and validity. Reliability is a measure of the consistency of the test in repeated use. Validity is the ability of the test to identify correctly which individuals have the disease and which do not.
- The benefits of the screening program should outweigh the costs

### **Asbestos and silica related disease**

Silicosis is still an important occupational lung disease. Rosenman recently estimated that there are between 3600 and 7300 newly recognized cases a year of silicosis in the United States <sup>1</sup>. At least 1.7 million U.S. workers are potentially exposed to respirable crystalline silica <sup>2</sup>. Hazardous exposures to silica, at levels likely to result in disease, continue to occur in a range of industries and occupations in the United States.

It is also important to remember that thousands of workers have had, and will still develop, asbestos-related disease. In this country, from 1940 to 1979, at least 27.5 million workers were occupationally exposed to asbestos in shipyards, manufacturing operations, construction work and a wide range of other industries and occupations; 18.8 million of these had high levels of exposure<sup>3</sup>. In 1982 William Nicholson at Mt. Sinai projected that the occupational exposures that occurred between 1940 and 1979 would result in 8,200 – 9,700 asbestos related cancer deaths annually, peaking in 2000, and then declining but remaining substantial for another 3 decades. Overall, the Nicholson study projected that nearly 500,000 workers would die from asbestos related cancers between 1967 and 2030; deaths from asbestosis are above and beyond this number. Because of the long lag between exposure to asbestos and the development of an asbestos related cancer or another asbestos disease, the asbestos disease epidemic is only now reaching a peak, and will be with us for decades to come.

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<sup>1</sup> Rosenman K, Reilly MJ, and Henneberger PK. 2003 Estimating The Total Number Of Newly-Recognized Silicosis Cases In The United States. *Am J Ind Med* 44:141-147

<sup>2</sup> DHHS/CDC/NIOSH. Health Effects of Occupational Exposure to Respirable Silica. DHHS(NIOSH) publication # 2002-129 Cincinnati, OH

<sup>3</sup> Nicholson WJ, Perkel G, Selikoff IJ. 1982. *Occupational exposure to asbestos: population at risk and projected mortality -- 1980-2003*. *Am J Ind Med* 3:259-311. Mr. Nicholson worked with Irving Selikoff, MD at the Mt. Sinai School of Medicine

## **Role of screening in asbestos-related and silica-related disease**

Screening for asbestosis or silicosis has several clear public health and medical benefits:

- Identification of occupations and industries where excess exposure still occurs, so that exposure reduction can occur
- Implementation of smoking cessation programs. Evidence shows that smoking cessation programs that are integrated with assessment of toxic exposures at work are more effective than smoking cessation programs alone <sup>4</sup>
- Identification of individuals at heightened risk from other occupational exposures. For example, workers with significant lung impairment from asbestosis or silicosis should not be exposed to other occupational agents that will add injury to that lung disease.

## **Elements of a good occupational lung disease screening program**

In 2000, the Association of Occupational and Environmental Clinics (AOEC) developed a set of criteria for medical screening programs for asbestos; the policy is reproduced

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<sup>4</sup> Sorensen G. 2001 Worksite tobacco control programs: the role of occupational health. *Respir Physiol*. 2001 Oct;128(1):89-102; Sorensen G, Barbeau E, Hunt MK, Emmons K. 2004 Reducing social disparities in tobacco use: a social-contextual model for reducing tobacco use among blue-collar workers, *Am J Public Health*. Feb;94(2):230-9.

here in its entirety. These principles apply as well to screening for silicosis. AOEC is a leading organization in the field of occupational medicine.

***The Association of Occupational and Environmental Clinics***

***Policy Statement on Asbestos Screening***

*The Association of Occupational and Environmental Clinics is concerned that medically inadequate screening tests are being conducted to identify cases of asbestos-related disease for legal action. These tests do not conform to the necessary standards for screening programs conducted for patient care and protection. Screening is only conducted as a preliminary step in determining the presence of asbestos-related disease. AOEC therefore supports the following statement:*

*Screening on the basis of chest x-ray and work history alone identifies possible cases but does not by itself provide sufficient information to make a firm diagnosis, to assess impairment or to guide patient management.*

*An appropriate screening program for asbestos-related lung disease includes properly chosen and interpreted chest films, reviewed within one week of screening; a complete exposure history; symptom review; standardized spirometry; and physical examination.*

*Programs should also include smoking cessation interventions, evaluation for other malignancies and evaluation for immunization against pneumococcal pneumonia.*

*Timely physician disclosure of results to the patient, appropriate medical follow-up and patient education are essential.*

*Omission of these important preventive aspects in the clinical assessment of asbestos-related lung disease falls short of the standard of care and ethical practice in occupational health.*

### **Who provides asbestos screening for exposed workers?**

Given the clear benefits of screening exposed workers for asbestos and silica-related disease, such programs should be available. Regular monitoring of workers with significant exposure to asbestos was recommended by the American Thoracic Society (ATS) in its recent statement on diagnosis and initial management of diseases related to asbestos.<sup>5</sup> However, there has been no public health infrastructure, and no employer-mandated programs, to provide such screening. The Occupational Safety and Health Administration does require medical monitoring of workers who are exposed to asbestos, but this rule does not require monitoring after the worker leaves the place of employment where exposure occurred. Since asbestosis takes at least 20 years after first exposure to develop, screening programs should be also be directed at former employees. (The U.S.

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<sup>5</sup> American Thoracic Society Statement on Diagnosis and initial management of nonmalignant diseases related to asbestos. 2004. Am J Respir Crit Care Med 170:691-715

Navy does include formerly exposed workers in its medical surveillance program for asbestos, based on a recommendation from the examining doctor.)

Some construction unions, in conjunction with employers, have developed programs for their members; these programs reach a very small proportion of the workers at risk. The largest such program is run by the Sheet Metal Occupational Health Institute Trust, which has provided medical examinations to over 20,000 sheet metal workers since 1998. This program follows the guidelines for screening programs outlined here, and can serve as a model for future programs <sup>6</sup>. In addition to finding cases of asbestos-related disease, this program has been effective in reducing exposures to sheet metal workers, and in reducing smoking in the group screened.

In recognition of the lack of medical screening services for former workers, the U.S. Department of Energy initiated a medical screening program for former workers from the atomic weapons complex <sup>7</sup>. Universities and other public health organizations provide medical examinations to detect health effects of remote exposure, again following the guidelines for screening programs described above.

As noted above, Nicholson estimated there were 18.8 million U.S. workers with high exposures to asbestos before 1982; many of these workers are still alive and could benefit

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<sup>6</sup> Welch LS, Michaels D, and Zoloth S. Asbestos-Related Disease among Sheet Metal Workers. American Journal of Industrial Medicine 25:635-48, 1994

<sup>7</sup> Dement J, Welch, L, Bingham E, Cameron B, Rice C, Quinn P, Ringen K. Surveillance Of Respiratory Diseases Among Construction And Trade Workers At Department Of Energy Nuclear Sites. Am J Ind Med. 2003 Jun;43(6):559-73

from screening. These workers have seen co-workers and even family members die of asbestos-related diseases, and so they have taken opportunities afforded them to be screened for disease; anyone would. The challenge for those of us in public health is to assure that these programs meet the standards set by AOEC, ATS and other organizations.